

AMENDMENTS TO THE CLAIMS:

1-9 (Cancelled)

10. (Currently Amended) ~~The apparatus of claim 9,~~ An apparatus for parallel processing of a data stream, comprising:

a data formatter for receiving a data stream and constructing therefrom a plurality of data lines, said data formatter comprising n output lines, each outputting respective 1/n of each of the data lines; and n processing groups, each comprising m processing nodes commonly connected to one of the n lines,

wherein each of the m processing nodes is for processing approximately 1/m of the data flowing in one of the n lines substantially simultaneously and independently of the other processing nodes;

wherein each processing node is for processing the approximately 1/m of the data as a plurality of data sub-blocks substantially simultaneously, each sub-block comprising a maximum number “max_size” of lines, and

wherein each node has an identification number and a processor configured to perform the steps of:

calculating a nominal number of lines to be processed by each node and an excess “mismatch_1” number of lines based on the plurality of data lines and the number of nodes m per processing group;

calculating a number of sub-blocks to be processed per node based on max_size and the nominal number of lines per node;

calculating a nominal size, in lines, of the sub-blocks and an excess “mismatch_2” number of lines based on the nominal number of lines per node and the number of sub-blocks per node;

increasing the size of a mismatch_2 number of sub-blocks by one line; and

increasing the size of the node by one line based on mismatch_1 and the node identification number.

11. (Currently Amended) ~~The apparatus of claim 9,~~ An apparatus for parallel processing of a data stream, comprising:

a data formatter for receiving a data stream and constructing therefrom a plurality of data lines, said data formatter comprising n output lines, each outputting respective 1/n of each of the data lines; and n processing groups, each comprising m processing nodes commonly connected to one of the n lines,

wherein each of the m processing nodes is for processing approximately 1/m of the data flowing in one of the n lines substantially simultaneously and independently of the other processing nodes;

wherein each processing node is for processing the approximately 1/m of the data as a plurality of data sub-blocks substantially simultaneously, each sub-block comprising a maximum number "max_size" of lines, and

wherein each node has an identification number and a processor configured to perform the steps of:

calculating a nominal number of lines to be processed by each node and an excess "mismatch_1" number of lines based on the plurality of data lines and the number of nodes m per processing group;

calculating a number of sub-blocks to be processed per node based on max_size and the nominal number of lines per node;

calculating a nominal size, in lines, of the sub-blocks and an excess "mismatch_2" number of lines based on the nominal number of lines per node and the number of sub-blocks per node;

determining a variable "threshold", wherein threshold is equal to mismatch_2 when the node identification number is greater than or equal to mismatch_1, and threshold is equal to mismatch_2 + 1 when the node identification number is less than mismatch_1; and

increasing the size of a threshold number of sub-blocks by one line.

12-16 (Cancelled)